AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

In the claims

1. (Withdrawn) A magnetic recording medium, comprising:
a substrate
a magnetic recording layer and
a caplayer,
wherein the caplayer has been annealed ***in*** *situ* at a temperature of from about 150°C to about 550°C.

2. (Withdrawn) The magnetic recording medium of claim 1, wherein the caplayer comprises CrMn and has a thickness of from about 0.5 nm to about 5 nm.

3. (Withdrawn) The magnetic recording medium of claim 2, wherein less than about 15 at.% of the caplayer is Cr.

4. (Withdrawn) The magnetic recording medium of claim 1, wherein Mrt/Hcr is less than about 50 nm.

5. (Withdrawn) The magnetic recording medium of claim 1, wherein the medium has **SMNR** of about 5 dB greater than that of another medium except wherein the caplayer of the another medium is not annealed.

6. (Withdrawn) The magnetic recording medium of claim 2, wherein Mrt/Hcr is less than about 20 nm.

7. (Withdrawn) The magnetic recording medium of claim 6, wherein the medium has SMNR of about 12 dB or more.

8. (Withdrawn) The magnetic recording medium of claim 1, wherein the medium has an Mrt of less than about 0.6 memu/cm^2 and an Hcr of greater than about 2000 kOe.

9. (Withdrawn) The magnetic recording medium of claim 8, wherein the medium has an Hcr of greater than about 3000 kOe.

10. (Currently amended) A method of manufacturing a magnetic recording medium, comprising:

depositing a magnetic recording layer on a substrate,

depositing a caplayer on the magnetic recording layer and

annealing the caplayer *in situ* at a temperature of from about 150°C to about 550°C thereby manufacturing said magnetic recording medium, wherein the magnetic recording layer comprises CoCrPt.

11. (Canceled).

12. (Original) The method of claim 10, further comprising depositing a protective layer on the caplayer after annealing.

13. (Original) The method of claim 10, wherein annealing is carried out at from about 250°C to about 350°C.

14. (Original) The method of claim 10, wherein the annealing is carried out for less than about 30 seconds.

15. (Original) The method of claim 10, wherein the annealing is carried out for about 14 seconds at a temperature of about 300°C.

16. (Original) The method of claim 15, wherein the caplayer has a thickness of from about 0.5 nm to about 5 nm.

17. (Original) The method of claim 10, wherein prior to depositing the caplayer on the substrate, the process further comprises:

depositing a sub-seed layer on the substrate;

depositing a seed layer on the substrate;

depositing an underlayer on the seed layer and

depositing a intermediate layer on the underlayer;

wherein the magnetic layer is deposited on the intermediate layer.

18. (Original) The method of claim 17, wherein the magnetic layer comprises at least one of Co, Cr, B, Pt, Ta, and Nb.

19. (Original) The method of claim 18, wherein the magnetic layer comprises a layer of CoCrPt having a thickness of from about 100 nm to about 400 nm.

20. (Withdrawn) A magnetic recording medium, comprising:

a magnetic recording layer and

means for low noise recording.

21. (New) A method of manufacturing a magnetic recording medium, comprising:

depositing a magnetic recording layer on a substrate,

depositing a caplayer on the magnetic recording layer and

annealing the caplayer *in situ* at a temperature of from about 150°C to about 550°C thereby manufacturing said magnetic recording medium, wherein the magnetic recording layer comprises Co and Cr.

22. (New) A method of manufacturing a magnetic recording medium, comprising:

depositing a magnetic recording layer on a substrate,

depositing a caplayer on the magnetic recording layer and

annealing the caplayer *in situ* at a temperature of from about 150°C to about 550°C thereby manufacturing said magnetic recording medium, wherein the caplayer comprises Cr.

23. (New) The method of claim 22, wherein the caplayer further comprises Mn.

24. (New) The method of claim 23, wherein the Cr content is less than 15 atomic percent.